Request for Economic Stimulus Funds

<u>Concept</u> <u>Proposal</u>

Submitters (Name of Workgroup & Chair/Co-Chairs): **STEM (Science, Technology, Engineering and Mathematics) (Dr. Lee Todd)**

Project Title: **SKyTeach Program Facility Construction and Information Technology**

Project Partners (Known or Anticipated): Western Kentucky University – Ogden College of Science and Engineering and the College of Education and Behavioral Sciences together with the National Mathematics and Science Initiative. Potential interface with AdvanceKentucky, the complementary grant through the National Mathematics and Science Initiative to the Kentucky Science and Technology Corporation – Joanne Lang. SKyTeach has developed a strong partnership with the Green River Educational Cooperative Corporation in order to establish relationships with area teachers who will help mentor our students during the four years they are preparing to become teachers.

Project Background & Purpose (Justification for Project): The University of Texas at Austin developed a UTeach program to scale the number and quality of elementary, middle and high school teachers in the STEM disciplines. This highly successful program more than doubled the number of teachers, improved the quality (i.e., average G.P.A of graduates), and 85% of the graduates were still teaching after five years, all metrics well above the national average. ExxonMobil provide $120M to replicate this program at 12 other locations throughout the United States. Western Kentucky University (WKU) competed for and was awarded $2.5M over five years to replicate this program. Dr. Todd in a recent paper on "Scaling STEM Innovations" indicated that "While academia would have wanted to make it "better", ExxonMobil took the position that UTeach was the best program they could find to meet their needs, so they funded it. I believe that if higher education is going to take the lead in helping to alleviate the STEM shortfall in this nation, we need to adopt industry's implementation and scale mentality." WKU is in agreement. The SKyTeach program is also mentioned in the STEM Pipeline Task Foce document as well. Within just the first year, we have 42 students enrolled in the program, have developed the model curriculum as in UTeach, and excellent students are involved, including premedical students and Gatton Academy of Mathematics and Science Academy for gifted students. A critical piece for the success of this program is training the teachers to get students to think critically and be able analyze data at a higher level. The National Mathematics and Science Initiative (NMSI) staff has evaluated our program several times and made visits. They have been very pleased with WKU's performance and have asked our team to present at the national conference in Austin this May. Our dilemma is that the program has developed more rapidly than

we had anticipated and we need to scale the facilities to keep pace. The number of students in the program will double by next fall. We also have some information technology requirements that will need to be met. As we gather more data in the years to come, the legislature may want to scale this project throughout the Commonwealth, but we need more data first.

Project Description (General Goals & Implementation Strategies): The goal is to scale the SKyTeach (UTeach) program at WKU into facilities that can accommodate this program and meet the stringent location requirements set forth by the NMSI. The SKyTeach program currently occupies the Planetarium. There are offices for two Master Teachers, an Office Coordinator, a workroom for students, and a storage room. We are remodeling a laboratory in the new Snell Hall as a classroom dedicated to the SKyTeach program. We are requesting funds to construct a small building dedicated to the SKyTeach program adjacent to Ogden College of Science and Engineering in order to meet the requirements set forth by NMSI and the UTeach model. As students move through the program we are going to need more classrooms, three to be specific, each with increasingly more developed laboratories. Offices for the staff, storage, and student workroom should be adjacent to the classrooms. WKU has moved one of the Master teachers to a hard line and now can match more money to hire another Master teacher for next fall. We are in the process of hiring a business manager as well. Therefore, we will need more office space that does not exist in the Planetarium. The facility requested will need to exceed 10,000 square feet in order to accommodate this growth and future growth and meet the requirements of UTeach. The location is available, but the money for the building is not. At approximately $300/sq. ft. in construction costs, the project cost is $3,000,000. The information technology (networking, internet connection, white-boards, etc.) will require an additional $200,000. If we can grow the program and provide a central location, it should be scalable throughout the state with the help of other institutions of higher education.

Project Team (Project Manager(s), Content Experts, Instructional Designers, etc.): The project team is comprised of the deans of the College of Science and Engineering and the College of Educational and Behavioral Sciences, The P.I. (Dr. Scott Bonham – Physics and Astronomy), the two co-directors Dr. David Erbach (Mathematics and Computer Science), Vicki Metzgar (Curriculum and Instruction), two Master Teachers, teacher mentors, and a Steering Committee comprised of representatives from each scientific discipline involved with teacher certification, local teachers, curriculum and instruction faculty, and others. WKU works in close communication with UTeach and the NMSI.

Project Budget & Amount of Economic Stimulus Funds Requested:

	WKU	Stimulus Funding
Construction of the core SKyTeach facility:	0	**$3,000,000**

| Purchase and installation of Information Technology | $200,000 | 0 |

Total Budget: $3,200,000